【Product Name】 MagPure Circulating DNA Mini Kit

【Product specifications】 20Preps, 200 Preps/Kit

【Intended Use】

MagPure Circulating DNA Mini Kit designed for purification of high quality circulating DNA (cfDNA) from cell-free body fluids (such as plasma, serum). The purified DNA is suitable for direct use in downstream applications such as PCR, real-time PCR, Biochip analysis and NGS.

【Principle】

This product is based on the purification method of high binding magnetic particles. The sample is lysed and digested under the action of lysate and Protease. DNA is released into the lysate. After adding magnetic particles and binding solution, DNA will be adsorbed on the surface of magnetic particles, and impurities such as proteins will be removed without adsorption. The adsorbed particles were washed with washing solution to remove proteins and impurities, washed with ethanol to remove salts, and finally DNA was eluted by Elution Buffer.

【Main Composition】

Cat.No.	IVD5432-20	IVD5432	Composition
Preps	20 Preps	200 Preps	/
MagPure Particles G	1.2 ml	14 ml	Magnetic Particles
Carrier RNA	310 ug	310 ug	Poly A
Proteinase K	24 mg	180 mg	Protease
Protease Dissolve Buffer	1.8 ml	10 ml	Glycorel/Tris/$CaCl_2$
Buffer MLK	25 ml	250 ml	Guanidine Salt
Buffer MAW1	25 ml	250 ml	Guanidine Salt
Buffer MW2*	10 ml	2 x 50 ml	Tris/NaCl
Elution Buffer	5 ml	60 ml	Tris

【Storage conditions and Validity】

Proteinase K, Carrier RNA and MagPure Particles G should be stored at 2–8°C upon arrival. However, short-term storage (up to 12 weeks) at room temperature (15–25°C) does not affect their performance. The remaining kit components can be stored dry at room temperature (15 – 25° C) and are stable for at least 18 months under these conditions.The entire kit can be stored at 2 – 8° C, but in this case buffers should be redissolved before use. Make sure that all buffers are at room temperature when used.

【Preparation before Use】

- Add 1.2ml (20Preps) or 9ml(200Preps) ml Protease Dissolve Buffer to the Proteinase K, and store at -20~8℃ after dissolve.
- Add 0.31ml ml Elution Buffer to the Carrier RNA, and store at -20℃ after dissolve.
- Dilute Buffer MW2 with 40 ml (20Preps) or 2 x 200ml(200Preps) 100% ethanol and store at room temperature.

【Manual Protocol 】

1. The Volume of Sample, Proteinase K, MagPure Particles G, Buffer MLK.

Sample Volume	200 µl	300 µl	400 µl	500 µl	600 µl
Proteinase K	15µl	20µl	30µl	35µl	40µl
MagPure Particles G	20µl	30µl	40µl	50µl	60µl
Buffer MLK	350µl	530µl	700µl	900µl	1000µl
Carrier RNA	Optional: Add 0.1~0.5µg each prep. Carrier RNA can reduce the adsorption of consumables on DNA, but carrier RNA can affect the quantification of qubit. Reducing carrier RNA to 100ng did not significantly affect qubit quantification.				

2. **Transfer the Proteinase K and MagPure Particles G to 2ml microcentrifuge tube.**
3. **Add 200~600 µl Plasma or serum to the microcentrifuge tube.**
4. **Add Buffer MLK to the sample and** mix thoroughly by inverting for 15~30 times. Mix upside down for 10 minutes at room temperature.
5. Place the tube to the magnetic stand for 3 minutes until the beads have formed a tight pellet. Then remove the supernatant.
6. **Add 800µl Buffer MAW1** and vortex for 15 seconds to re-suspend beads. Place the tube to the magnetic stand for 1 minute until the beads have form a tight pellet. Then remove the supernatant.
7. **Add 800µl Buffer MW2,** and vortex for 15 seconds to re-suspend beads. Place the tube to the magnetic stand for 1 minute until the beads have form a tight pellet. Then remove the supernatant.
8. **Add 800µl Buffer MW2,** and vortex for 15 seconds to re-suspend beads. Place the tube to the magnetic stand for 1 minute until the beads have form a tight pellet. Then remove the supernatant.
9. Centrifuge shortly to collect liquid on the tube. Place the tube to the magnetic stand and remove all the

liquid carefully.

10. Air dry for 10~15 minutes.

11. Add 30~50μl Elution Buffer/Low TE/Sterile Water and re-suspend the beads by vortex. Sit at room temperature for 5 minutes. Shake 1~2 times to dissolve DNA from magnetic particles more efficiently.

12. Place the tube to the magnetic stand for 3 minutes.

13. Transfer the supernatant containing the purified DNA to a clean 1.5ml centrifuge tube.

Auto Purify by KingFisher Flex for 300μl Sample

1. Add the Reagents/sample to the wells of the deep well plate according to the table below.

Name of the Plate	Pre-loaded reagents	Addition before use
Sample Plate A	500μl Buffer MLK	300μl Plasma 20μl Proteinase K optional 50ng Carrier RNA.
Wash Plate 1	800μl Buffer MAW1, Put in 96 magnetic Tip 30μl MagPure Particle G	
Wash Plate 2	800μl Buffer MW2	
Wash Plate 3	800μl Buffer MW2	
Elution plate	50μl Elution Buffer	

2. Turn on the machine, start the corresponding program(IVD5432_F_300).
3. Place the 96-well plate into the instrument as prompted.
4. Finish the operation after ~40 minutes.
5. Remove the 96-well plate and magnetic jacket.
6. Store the Elute product at -20~8℃.

Auto Purify by KingFisher Flex for 700μl Sample

1. Add the Reagents/sample to the wells of the deep well plate according to the table below.

Name of the Plate	Pre-loaded reagents	Addition before use
Sample Plate A	550μl Buffer MLK	350μl Plasma, 20μl Proteinase K optional 50ng Carrier RNA.
Sample Plate B	550μl Buffer MLK	350μl Plasma, 20μl Proteinase K optional 50ng Carrier RNA.
Wash Plate 1	800μl Buffer MAW1, Put in 96 magnetic Tip 60μl MagPure Particle G	
Wash Plate 2	800μl Buffer MW2	
Wash Plate 3	800μl Buffer MW2	
Elution plate	60μl Elution Buffer	

2. Turn on the machine, start the corresponding program(IVD5432_F_700).
3. Place the 96-well plate into the instrument as prompted.
4. Finish the operation after ~40 minutes.
5. Remove the 96-well plate and magnetic jacket.
6. Store the Elute product at -20~8℃.

Auto Purify by KingFisher Flex for 1ml Sample

1. Add the Reagents/sample to the wells of the deep well plate according to the table below.

Name of the Plate	Pre-loaded reagents	Addition before use
Sample Plate A	550μl Buffer MLK	330μl Plasma and 13μl Proteinase K, optional 30ng Carrier RNA.
Sample Plate B	550μl Buffer MLK	330μl Plasma and 13μl Proteinase K, optional 30ng Carrier RNA.
Sample plate C	550μl Buffer MLK	330μl Plasma and 13μl Proteinase K, optional 30ng Carrier RNA.
Wash Plate 1	800μl Buffer MAW1, Put in 96 magnetic Tip 60μl MagPure Particle G	
Wash Plate 2	800μl Buffer MW2	
Wash Plate 3	800μl Buffer MW2	
Elution plate	70μl Elution Buffer	

2. Turn on the machine, start the corresponding program(IVD5432_F_1ml).
3. Place the 96-well plate into the instrument as prompted.
4. Finish the operation after ~60 minutes.
5. Remove the 96-well plate and magnetic jacket.
6. Store the Elute product at -20~8℃.